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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,475	10/10/2000	Esa Vuoppola	100.157US01	4331

7590 05/22/2003  
Fogg Slifer & Polglaze P A  
P O Box 581009  
Minneapolis, MN 55458-1009

EXAMINER

NGUYEN, TU X

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 05/22/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/685,475

Applicant(s)

VUOPPOLA, ESA

Examiner

Tu X Nguyen

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3. 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-23 and 29-31, are rejected under 35 U.S.C. 102(b) as being anticipated by Persson (US Patent 5,821,811).

Regarding claims 1-2, 6-8, 15, 17, 21, Persson discloses an amplification circuit for a wireless base station (see col.2 lines 17-26), the amplification circuit comprising:

a first port adapted to communicate signals to and from an antenna (see fig.1);

a second port adapted to communicate signals to and from a base station (see fig.1);

a first path, coupled between the first and second ports, the first path including at least one bandpass filter (Rx1, fig.1) and an amplifier (LNA, fig.1) that pass and amplify upstream signals (Rx, fig.1) in a first frequency band; and

a second path, coupled between the first and second ports, the second path including a filter (Tx, fig.1) that stops upstream signals in the first frequency band and passes upstream signals in at least a second frequency band and downstream signals in at least third and fourth frequency bands (see fig.2 and col.3 lines 7-21). "various transmission line segments -  $\lambda/4$  wavelength" reads on "first, second, third and fourth frequency bands.

Regarding claims 3, 9 and 18, Persson discloses the first bandpass filter passes signals between 1850 and 1990 Megahertz (see col.2 lines 25-26).

Regarding claims 4-5 and 10-11, Persson disclose the first bandpass filter signals with frequencies assigned to personal communications services (see col.2 lines 25-26). The frequency in range 1.9 GHz is inherently understood in wireless industry known as the personal communication system (PCS).

Regarding claims 12-13, Persson discloses the transceiver communicates upstream and downstream with the antenna, "a single feeder cable" is inherently included as shown on the cited reference (fig.1 and its illustration of col.2 lines 18-46).

Regarding claims 14, 20, 29 and 31, Persson discloses everything as claim 1 and 13 above. More specifically, Persson discloses the amplification circuits comprises a plurality of amplification circuits that are cascaded to allow upstream frequency bands associated with separate service to be selectively amplified (see col.2 lines 37-38).

Regarding claims 16, 19 and 22, Persson discloses the system is inherently receiving signals for first and second "wireless services" because it has capability receiving in different frequencies range between 0.5 to 1.9 GHz (see col.2 lines 25-26 and col.4 lines 14-15).

Regarding claim 23, Persson discloses the desired switching function that while one of transmission line segments is very low impedance, the other segment is very high impedance causing the incoming signal pass through the low impedance segment only. Therefore, the filters inherently design for overlap in frequencies in order to

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receive the desired frequencies in case of a power failure as suggested by Persson (see col.3 lines 59-65).

Regarding claim 30, Persson discloses everything as claim 29 above. More, specifically, Persson discloses a DC voltage passes to at least another of the plurality of upstream amplification circuits (see col.3 lines 45-37 and col.5 lines 1-3).

3. Claims 24 and 26, are rejected under 35 U.S.C. 102(b) as being anticipated by Garner et al. (US Patent 5,890,056).

Regarding claim 24, Garner et al. disclose a wireless system, comprising:  
a mobile switching center (16) that is adapted to be coupled to the public switched telephone network (10);

a plurality of base stations (18, 20), communicatively coupled to the mobile switching center, that are adapted to communicate with wireless terminals using one of at least two services (24, 26); and

wherein each base station supports the at least two services within the geographic area of the base station (see col.4 lines 35-37).

Regarding claims 26, the modified Garner et al. disclose each base station is adapted to communicate upstream signals for the wireless terminals in a first frequency band for a first of the at least two services and in a second frequency band for a second of the at least two services (see Garner col.3 lines 34-41 and col.4 lines 34-40 and fig.1).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 25 and 27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Garner et al. and further in view of Persson.

Regarding claim 25, Garner et al. fails to disclose each base station includes an amplification circuit that amplifies signals received from wireless terminals for one of the service and that passes without amplification signals from other wireless terminals for the other service and passes downstream signals to the wireless terminals.

Persson discloses a base station includes an amplification circuit that amplifies signals received from wireless terminals for one of the service and that passes without amplification signals from other wireless terminals for the other service and passes downstream signals to the wireless terminals (see fig.1). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Garner et al. with the above teaching of Persson in order to provide a base station, including receiving and transmitting multiple frequencies (as suggested by Persson, see col.2 lines 25-26).

Regarding claim 27, the modified Garner et al. discloses the first frequency band is above 1800 Megahertz and the second frequency band is below 1000 Megahertz (see Persson col.2 lines 25-26 and col.4 lines 14-15).

6. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Persson.

Regarding claim 28, Persson discloses everything as claim 1 above. However, Persson does not mention about combining the first frequency band and the at least one additional frequency band into a signal for transmission. Official notice is taken that the concept combining the first frequency band and the at least one additional frequency band into a signal for transmission are well known in the art. It would have been obvious a base station has a tuner circuit which has a mixer producing same frequency band with receiving frequency in process of transmission to demodulation circuit for deriving a base band frequency.

7. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Persson and further in view of Rose (US Patent 6,195,561).

Regarding claim 32, Persson fails to disclose a last of the plurality of amplification circuits includes a DC grounded antenna port.

Rose discloses a last of the plurality of amplification circuits includes a DC grounded antenna port (see col. 4 lines 27-39). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Persson with the above teaching of Rose in order to provide protection from lightning strikes.

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### Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Nguyen whose telephone number is (703) 305-3427. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, MAUNG NAY A, can be reached at (703) 308-7749.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 2600 Customer Service Office at (703) 306-0377.

**Any response to this action should be mailed to:**

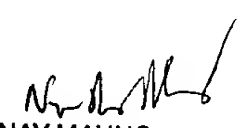
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Washington, D.C. 20231

**or faxed to:**

(703) 872-9314 (Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

TN  
May 8, 2003

  
NAY MAUNG  
PRIMARY EXAMINER